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LINKAGE BETWEEN ORGANIZATIONAL CULTURE AND ORGANIZATIONAL PERFORMANCE BASED ON ESTONIAN BUSINESS ORGANIZATIONS

Master's thesis

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This thesis conforms to the requirements for a Master's thesis.

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Abstract

The purpose of this paper is to analyse the linkages between organizational culture (OC) and organizational performance in Estonian business organizations. In this paper the OC was measured by Organizational Values Questionnaire (OVQ) developed by A. Reino (2009) based on Competing Values Framework (Quinn, Cameron 1999). The organizational performance was measured by six different indicators and the financial data is taken from the Estonian Business Register covering the time period between 2002 and 2014. The OC data was collected by different researchers between 2005 and 2016. The sample consists of 19 business organizations with 2254 respondents and this data was linked with performance that was measured before and after the OC. Factor analysis results revealed three types of OC. All types of organizational culture were linked positively with performance except Internal Processes type. This type was negatively correlated with performance indicators that were measured before the OC was measured. Correlations were the strongest with organizational performance measured three years after the OC was measured. Those results indicated that in organizations where the culture promotes stability, control and following strict rules were in connection with better performance measured after the OC.

Keywords: organizational culture, organizational performance, Competing Values Framework, Estonian organizations

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Introduction

There is a growing interest in analyzing the relationship between OC and organizational performance (see for example Yilmaz, Ergun 2008; Aidla 2009; Saame *et al.* 2011; Zehir *et al.* 2011, Hartnell *et al.* 2011, Cheung *et al.* 2012, Jacobs *et al.* 2013, Yesil, Kaya 2013, Valmohammadi, Roshanzamir 2015; Naranjo-Valencia *et al.* 2016 etc). Theoretical evidence support the idea that OC is connected to performance and affects long term effectiveness (Zheng *et al.* 2010, Denison *et al.* 2003). Though many studies demonstrate linkages between OC and performance, the findings are controversial. Moreover, there are few studies that investigate the relationship between OC and performance in longer time frame. Peters and Waterman (1982), Jacobs *et al.* (2013) and Boyce *et al.* (2015) have found that time is an important factor in investigating the connection between the OC and performance.

Compared to other countries, there has been relatively few studies in Estonia on the topic where this linkage has been investigated. Many authors who have researched OC in Estonia (see for example Vadi 2000; Aidla 2009; Reino 2009, Saame *et al.* 2011 etc.) found that knowledge in OC gives the organization an advantage in achieving better financial results. In this context a transition society like Estonia may reveal certain OC patterns which are country-specific. Since regaining independence in 1991, Estonia has quickly managed to establish a modern market economy. After becoming a member state of the European Union in 2004 the competition increased and Estonian organizations had to find new ways how to survive. The historical background plays an important role in the formation of OC (Reino, Vadi 2012). The connection between OC and performance in Estonian organizations has been investigated by Aidla (2009), Reino (2009) and Saame *et al.* 2011 etc. For example Aidla (2009), Saame *et al.* (2011) have analyzed public sector OC and performance, where results showed that organizational culture was connected with performance. It can be said that businesses success will be affected strongly by OC, because it is almost impossible for competitors to copy it (Yesil, Kaya 2013). Due to the fact that changes in OC require time and dedication (Reino *et al.* 2007; Naranjo-Valencia *et al.* 2016). There are several authors who have pointed out that OC can provide greater competitive advantage and effectiveness than any innovative technology (Barney 1986; Schein 2004, Zehir *et al.*

2011, Yesil, Kaya 2013). It can be said that organization culture helps organizations to understand its position better and due to that it is possible to make management decisions that increase success of organization along with satisfaction and commitment of workers. Cameron, Quinn (1999) have also pointed out that the successful organizations have created an organisational culture that has become their competitive advantage. OC determines relationships between organization and employees, and also helps organization to adjust to external environment.

Organizations are affected by external and internal forces, which means that environment influences the processes in organizations. It is important to understand how organizations have deal with external and internal pressure and temporal factor is also important. Understanding the values what are typical for each organization, helps to cope with the environmental pressure (Fekete, Böcskei 2011*).* Changing the OC is a slow process, but despite that important changes in external environment may accelerate the transformation of OC (Reino *et al.* 2007). Because of that this paper measures the performance of various Estonian business organizations comparing different time periods that enabled to get a more detailed overview of the connections and also an overview of the dynamics of the change connections'.

The aim of this paper is to explore the linkages between the different types of OC and organizational performance measured in Estonian business organizations in different time periods. The original contribution of this paper is to evaluate the OC and the performance indicators linkages in different time periods, measuring the performance indicators at the same year as the OC questionnaire carried out and also one, two and three years before and after OC was measured. Compared to the previous studies various researchers have suggested future researchers to use wider temporal frame (for example Peter, Waterman (1982); Yilmaz, Ergun (2008); Chatman *et al*. (2014)). For example Chatman *et al*. (2014) found that organizational culture indicators are more related to the future financial performance.

There are studies that have investigated the relationships between the OC and performance in longer time horizon (see for example Jacobs *et al.* (2013); Chatman *et al*. (2014); Boyce *et al*. 2015), but not in Estonian context.

The second contribution of this study is that it takes into consideration various financial indicators: labour costs per employee, sales per employee, operational cash flow per employee, return on equity (ROE), return on assets (ROA) and return on investment (ROI). Financial indicators are calculated based on organizations annual reports and selection is based on the earlier articles on the same topic. Measuring performance on different period gives a detailed overview of the relations and their change dynamics between the OC and performance.

To investigate the types of OC, author's research is based on A. Reino's Organizational Values Questionnaire (OVQ) which rely on the Competing Values Framework (CVF) (Quinn, Cameron 1983). This questionnaire measures two dimensions the OC: flexibility/stability and external/internal orientation which are important dimensions in transition societies like Estonia (Reino 2009). The questionnaire also has been widely used in Estonia, for example current study database includes data from 2005-2016 from more than 19 Estonian organizations with 2154 respondents. Original OVQ is in Estonian but this questionnaire has also been translated into English and Russian, so it can be used in multicultural organizations in Estonia and makes it possible to compare collected data with international researches (Reino 2009). For example it has been used in Sweden to investigate an impact of hospital`s organizational culture on patient satisfaction (Alharbi *et al.* 2012). CFV is also used in studies where multimethod analyses have been used, like in this study using factor analysis and correlation analysis.

This paper is divided into three parts. The first section provides a brief overview of the organizational culture, the types of organizational culture and previous studies, where the linkages between OC and performance have been investigated. In the second section the confirmatory factor analysis and correlation analysis results are presented. Finally are presented discussion part, limitations and suggestions for the future studies.

Literature review

Organizational culture and types of organizational culture

In this chapter a brief overview of several authors approaches on different types of OC has given. Although there are many typologies, Competing Values Framework (CVF) composed by Cameron and Quinn will be focus of this paper.

The literature on OC is diverse and there is a large volume of published studies that describe the definitions of the OC and but there is no firm definition that is accepted universally (Škerlavaj *et al.* 2007, Abu-Jarad *et al.* 2010). It has been highlighted that OC is a set of shared values which can be reflected by symbolic means like stories, slogans, legends, anecdotes and myths (Peters, Waterman 1982; Hofstede 1997). These shared meanings that make it possible for group of members to interpret, share the binding stories, values and act upon that. It is important that to a greater or less degree it has to be shared by all members (Schein 2004).

Cameron, Quinn (2006) have pointed out that culture defines the core values, assumptions, interpretations and approaches that characterize an organization. Schein (2004: 17) has defined OC as a „pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems". The common part of these several definitions is that most researchers of OC agree that shared values are the most important element defining OC, it is like a key element (Peters, Waterman 1982; Schein 1984; Hofstede 1997; Sun 2008). Current study relies on the definition proposed by Schein, because it has pointed out the elements of interaction that could form OC.

Schein (2004) has pointed out that critical elements of OC are stability, depth and breadth. Since OC is a shared set of values that defines the group and therefore it is a rather stable. Because of that it can influence organizational functioning and stability in two ways. One is that the OC keeps the organization together, but it can also become a barrier in innovation process (Reino *et al.* 2007, Vadi 2000). In that context stability

means that the changes and transformation of the OC is a slow process and changes take time. Second characteristic is depth because it involves unconscious parts of organizational life. It is again related to stability, meaning that some decisions and activities are made in the same way as always and that can cause a certain intertia that can make it difficult to change the pattern. Third is breadth because it covers all of the organization's functioning and patterning. (*Ibid.*) OC is diverse because it ties together the various elements (Hofstede 2001, Schein 2004). Due to that it influences how people act at work and this in turn influences the whole organization's action.

Researchers have developed numbers of models to investigate the different elements of OC and there are many dimensions how to interpret it. For instance, Cameron and Quinn (1999) have compiled a model, through which organisational culture can be characterized by flexibility, stability and degree of orientation to internal and external environment. Based on Schein, stability, depth and breadth are important factors in organizations. Goffee and Jones categorize OC into four types through solidarity and sociability (Schein 2004). Daft (1999) has connected OC and effectivity with four different categories, that are based on two dimensions — rate of changeability or stability coming from external environment and rate of strategic focus, that shows organization inward or outward. Table 1 presents four different typologies that explain organizations dimensions.

Table 1. Comparing the organizational culture based on different typologies

K. S. Cameron, R. E. Quinn	R. L. Daft	R. Goffe, G. Jones	R. Harrison
Stability, flexibility/ external, internal focus	Flexibility, stability/ external, internal focus	Solidarity/ sociability	Centralization/ formalization
The Adhocracy culture: creative, dynamic working environment, risktaking, openness to changes	The Adabtility culture: flexibilty, innovatsion, strategic leaders' values are important, openess to the changes, customer stisfaction	Communal: low solidarity, high sociability	Achievement oriented: goal orientation throw innovations, low formalizations
Common part: similar names, flexibility, openness to the changes			
The Hierarchy culture: predictability, formalization, structuring, stability, salary depends on position, hierarchy, internal focus	The Bureaucratic culture: internal focus, stability, rationality, cooperation	Fragmented: low solidarity, low sociability	Role oriented: centralization, formalization, bureaucracy, hierarchy

Common part: high formalization and stability			
The Market culture: orientation on production, continuous competition, performance are important, external focus	The Achievement culture: the importance of vision, organizational goals are important	Mercenary: high solidarity, low sociability	Power oriented: low sucess need, formalization, results are important
Common part: results and goal orientation, high achievement and motivation			
The Clan culture: caring, cohesion, focusing on collective, commitment, formalized communication	The Clan culture: employees needs are important, internal focus, employees involvement on external changes	Networked: high solidarity, high sociability	Support oriented: caring, cohesion, low centralization and formalization
Common part: good relatinships with employees, internal focus			

Source: compiled by the author based on Harrison 1972; Cameron, Quinn 1999; Daft 1999; Schein 2004

Comparing these typologies from different researchers it turns out that the approaches are most similar in the market culture type. All researchers have pointed out that competitiveness, external orientation and stability are important in this type.

Despite the availability of several typologies the four-part typology is dominant and many researchers have used Competing Values Framework (CVF) for empirical research. Moreover, this typology has been used for investigating the links between the OC and performance as well (see for example Zhou *et al.* 2011; Jacobs *et al.* 2013; Valmohammadi, Roshanzamir 2015). CVF-based research tool has good validity and reliability exploring the OC and it is the most extensively used typology in OC surveys (Kalliath *et al.* 1999). The author will focus on Quinn's and Cameron's typology`s approach. Based on the original model of Competing Values Framework, Reino (2009) has been developed Organization Competing Values questionnaire (OVQ) in Estonian and there have been conducted many surveys in Estonia on the basis of that questionnaire (see for example Reino 2009, Kallas 2010, Saame *et al.* 2011 etc).

CVF categorizes organizations in two-dimensional space and divides organizations culture into four different types. These are flexibility versus stability (control orientation) and external versus internal orientation (Quinn, Cameron 2006). Flexibility-stability focuses on activities that are inside the organization or outside the organization. Some organizations believe that adaptability is needed for being effective and it influence how they respond to changes (Škerlavaj *et al.* 2007). Other organizations find themselves more effective when they are stable and consistent

(Cameron, Quinn 2006; Jacobs *et al.* 2013). Compared to the second dimension, internal-external orientation, find themselves more effective when they have stable internal relationships. However others evaluate competiveness as a key to efficiency (*Ibid.*).

These combinations of two different dimensions could describe four types of OC. In order to make the different types of organizations understandable in the context of Estonia and other countries, the author has brought out both definitions that help to compare different publications from different authors. These four types are the following (Cameron, Quinn (2006); Reino (2009)):

1. Internal Process type / the Hierarchy culture type,

2. Rational Goal type/ the Market culture type,

3. Human Relations type/ the Clan culture type,

4. Open System type / the Adhocracy culture type.

These dimensions are also pointed out in Table 1. The above-mentioned OC type definitions are presented in the same way as Reino (2009) has used them and this classification is also used in this paper.

Characterizing every type, the Hierarchical culture is well coordinated, formal rules and policies are important, and so is predictability and internal focus. Cameron, Quinn (2006) have brought out that information management, documentation, stability, routines, centralization and control are the main features of this type. The Market culture type can usually be found in the organizations who value competiveness. Competition and winning is the "glue" that holds the employees and the organization together. This type is characterized by stability and having a strong external focus. These kind of organizations are more focused on external environment, rather than internal. (Cameron, Quinn 2006)

The Clan culture refers to a friendly working environment where the organization is like a family and the superiors are like mentors. Employees are characterized by high job and organization commitment and develop friendly relations. People have a shared understanding and commitment instead of using very formalized communication. The

Adhocracy type of culture is characterized by innovation and risk taking, these are highly creative and dynamic working environments. (Cameron, Quinn 2006) Table 2 outlines the OVQ main OC types and compares them in various criterias.

Table 2. Organizational Values Questionnaire four different types

Criteria	Rational Goal type	Open System type	Internal Processes type	Human Relations type
Dimension	Stability/ External	Flexibility/ External	Stability/ Internal	Flexibility/ Internal
Effectiveness criteria	Profit, productivity	Adaptability, external supporting	Stability, consistency	Commitment, community
Goal reach	Detailed instructions	Adaptation and also innovation	Reutilisations	Involvement
Focus	Real action, analyses, goals are important	Creativity, innovation, change management	Documentation, measurement	Participation, consensus, conflicts give resolutions
Orientation	Rational, netprofit	Innovation, flexibility	Hierarchy	Teamwork
Leader	Director and producer	Innovator and mediator	Monitor and coordinator	Mentor and facilitator

Source: compiled by the author based on Cameron, Quinn 2006, Hartnell *et al.* 2011

CVF expects that each of these four types is a pure type, but in reality organization culture is a combination of different culture orientations and usually one type is more dominant than the others (Škerlavaj *et al.* 2007).

Although various authors have developed different typologies to describe and measure OC, they all have one common attribute — they are functional while reflecting reality (Roots 2002). Using typologies helps to compare different organizations based on certain features of OC type and to find out which type is dominating. As it appears from the described typologies above, there is no ideal OC. It is important that the OC fits with the goals of the organization (Ogbonna, Harris 2000). Developing suitable OC also leads to organization's better performance.

Organizational culture and performance

In this subchapter the links between OC and performance based on previous studies will be presented. Earlier researches indicate that links between the OC and organizational performance are important and they have been investigated in many countries like China, Turkey, Hong Kong, England, Spain, USA, Iran, Nigeria and different sectors like finance, manufacturing and in high-technology companies. Researchers have found a significant relationship between OC and organizational outcomes such as financial better performance and gaining competitive advantage (Denison *et al*. 1995; Zehir *et al.* 2011; Ezirim *et al*. 2010; Uzkurt *et al.* 2013, etc). OC is considered to be a requirement for high levels of organizational performance, but the key is that every organization has to find its own way to get to these results (Cameron, Quinn 1999).

The author has summarized the researches where the links between OC and performance (see Appendix 1) have been investigated. In Appendix 1 there are studies where have used CVF but also studies with other typologies are presented. The table gives an overview of each OC type that was used and their association overall performance of the organizations. Independent and dependent variables have also been brought out. Presenting the statistical method is important because this influences the interpretation of the results. For example correlation analysis helps to interpret how strongly different OC indicators are correlated with performance. Using this kind of analysis, it can not be said whether OC influence performance or not. However it is possible to indicate using regression analysis the direction of influence (independent/dependent variable).

Based on Appendix 1 it can be said that the most widely used methods are the correlation analysis and regression analysis. Previous researchers have used various performance indicators for measuring organizational performance. The most often used indicators to measure the performance were ROA, sales growth, profitability, income and market share. For example Yesil, Kaya (2013) used ROA and sales growth, but Hartnell *et al.* (2011) measured the performance with profit, growth and market performance.

Previous studies indicate that there are links between OC and performance (Yilmaz, Ergun 2008; Zehir *et al*. 2011; Chatman *et al*. 2014 etc), but there are also researches (for example Ogbonna, Harris 2000, Zheng *et al*. 2010; Yesil, Kaya 2013) where scholars found no link between the OC and performance or OC even has a negative impact on financial performance. In some studies all OC types influenced different financial indicators, for example Naranjo-Valencia *et al*. (2016), Chan *et al*. (2004), Tseng (2010) showed that adhocracy culture and clan culture had a positive and the hierarchy culture had a negative effect on performance. Organizations that support innovation, creativity and adaptability demonstrate better performance and organizations with higher adaptability rate related positively with performance (Chatman *et al*. 2014). Cheung *et al*. (2012), Naranjo-Valencia *et al*. (2016) also pointed out that competitive and innovative culture is positively related to performance. Findings from previous studies indicate that organizations with higher level of teamwork and collectivism have better performance (Gu *et al*. 2014). The above-mentioned culture characteristics are mainly associated with Human Relations type and Open System type. Therefore the following hypothesis will be tested:

H_1: Human Relations type correlates positively with the organizational performance.

H_2: Open System type correlates positively with the organizational performance.

Market culture organization types are results-oriented, competition and winning is important for them (Cameron, Quinn 2006). Organizations, among which this kind of type is dominate, are closer to the customer. That helps to get immediate market information about changes and this could lead to better performance (Peters, Waterman 1982). There were also evidence from the previous researches that market culture has a positive effect on the organizational performance (Fekete, Böcskei 2011). These culture characteristics are mainly associated with the Rational Goal type and based on these arguments it is suggested that:

H_3: Rational Goal type correlates positively with the organizational performance.

Ogbonna, Harris (2000) found in their research that there were no links between the Hierarchy culture and performance but Fekete, Böcskei (2011), Naranjo-Valencia *et al*. (2016) revealed that hierarchy culture had a negative impact on organizational

performance. Tseng (2010) has pointed out that the hierarchy culture is not able to the external environment changes and due to that it is not the best performer compared to the other culture types. That the organizations that expect strick following of rules and procedures from employees have a negative effect on the organizational performance (Naranjo-Valencia *et al.* 2016). These culture features are associated with Internal Processes type and based on these findings, the following hypothesis is set:

H$_4$: Internal Processes type correlates negatively with the organizational performance.

Time is an important factor when investigating the links between the OC and performance. Researchers have pointed out that the OC indicators are more related to the performance indicators measured after the OC was measured (see for example Peters, Waterman (1982); Chatman *et al.*(2014), Boyce *et al.*(2015) etc) and relationships between OC and performance could be observable in a longer time horizon (Boyce *et al.* 2015). From 1 up to 3 years could give more useful information about the connection between OC and financial indicators (*Ibid.*). Therefore the following hypothesis can be suggested:

H$_5$: The types of organizational culture correlate with organizational performance measured performance in different time periods.

As a limitation of these studies (see Appendix 1) it can be pointed out that there were many researches where the sample was too small to conduct regression analysis and because of that some studies had a sample composition problem (e.g. Yesil, Kaya (2013). Careful selection of methods and indicators is critical for researches to give reliable results. For example increasing the sample size would help.

To summarize, the results of the researches where the links between OC and performance have been investigated, it can be said that organizations have different goals and evaluation of success. Organization are operating in different sectors and because of that the environment shapes different patterns of OC to be effective in that specific area (Saame *et al.* (2011). Every organizations wants to reach its goals because it will lead to a better performance (Soha *et al.* 2016). Empirical studies showed that OC influenced the organizational performance almost exclusively.

Methodology and sample

In this subchapter an overview of the empirical data and methods is given. Confirmatory factor analysis and correlation analysis were conducted to test the hypotheses proposed in the previous section and the details of each method are explained.

In order to investigate the connections between OC and performance, data from from 19 business organizations with 2254 respondents (see Appendix 2) was used. Data was collected by different researchers between 2005 and 2016. Figure 1 gives an overview of the data collection during different time periods. The sample consists of the organizations from different areas (11 service organizations, 8 production organizations) and different sizes (for example there were 2 micro, 2 small, 8 medium-size and 7 large organizations).
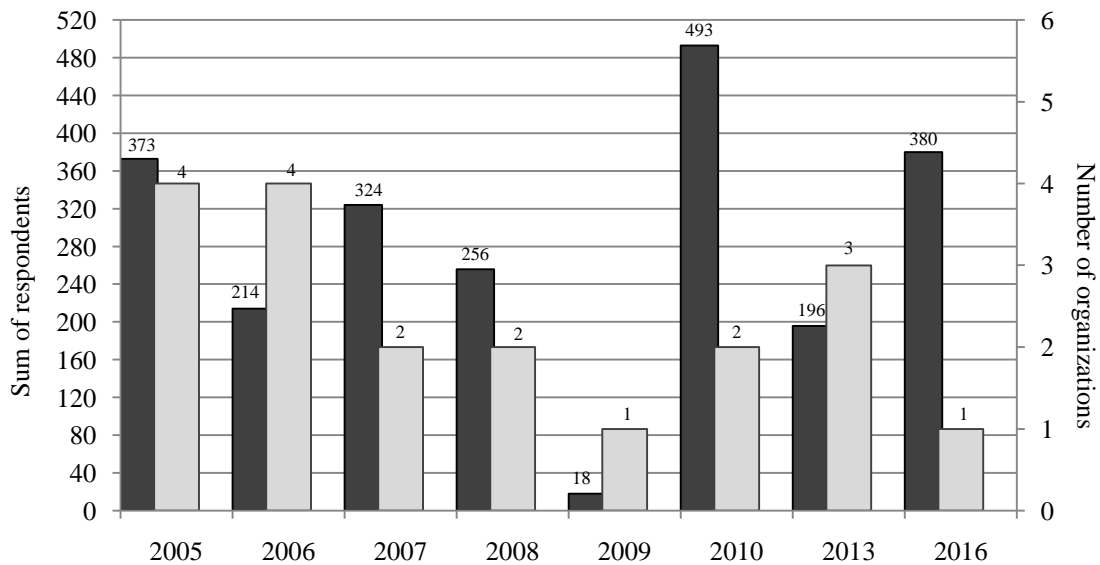

Figure 1. Number of organizations and respondents in 2005-2016
Source: compiled by the author

The sample was quite diverse in terms of respondents' demographic characteristics. In every organization employees with different profiles were represented (e.g. different age, education, position, tenure, nationality).

The next step was mapping the organizations culture based on Estonian business organization data and OVQ was applied to investigate the types of OC in Estonian organizations. The organization culture questionnaire consisted of 53 statements that

were measured on 10-point Likert-scale with extremes of "strongly disagree" and "strongly agree". Statistical analysis was compiled by using program STATA version 12.

Author used confirmatory factor analysis (CFA) to establish a scale for each type of OC and to check the construct reliability and validity of the types of OC. CFA was conducted for clarifying the structure of items and types of OC Sufficient value loadings for the items are over 0.5 and items with lower factor loadings (under 0.5), were dropped the purification process, because these items did not represent the latent variables well enough. CFA demonstrated that 3-types solution instead of 4 types should be used in further analysis. For example Reino (2009) has proposed a model with four scales describing OC, but Saame *et al.* (2011) also found 3-factor solution. According to the items that described the the types of OC there were three types of OC generated using the summarized scales.

As a source of financial indicators the Estonian Business Register, based on firms' annual reports covering the period 2002-2014, was used. Following indicators were taken into analysis: gross profit per employee, labour costs per employee, sales per employee, return on equity (ROE), return on assets (ROA) and return on investment (ROI). Assessing the organizational performance using various financial indicators provides the opportunity to look at various dimensions of performance (Fekete, Böeskei 2011). Three indicators were logarithmed: gross profit per employee, labour cost per employee and sales per employee because it allows to make their distribution more similar to the normal distribution. This method has also been used in previous studies like Chatman *et al.* (2014) where logarithmed net income, revenue and operating cash flow were used. Previous researchers Yesil, Kaya (2013) also suggested using objective financial measures (ROA, sales growth) instead of evaluating organizational performance by using a questionnaire.

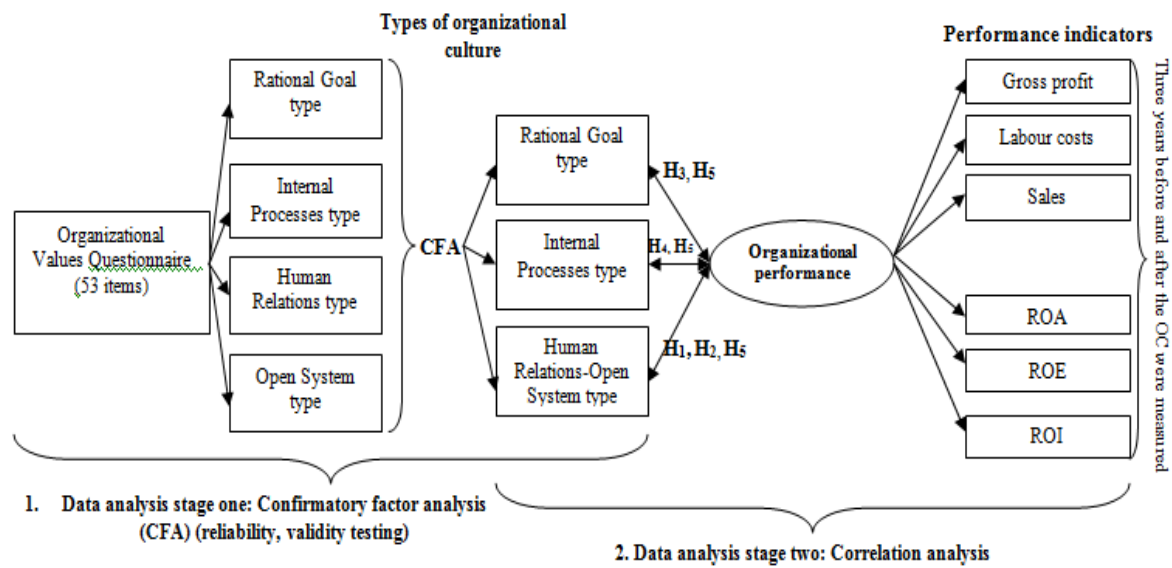Research model of this paper is presented in Figure 2.

Figure 2. Research model of the organizational culture and organizational performance
Notes: gross profit, labour costs and sales are logarithmed and measured per employee
Source: compiled by the author

After the summarized scales were found, the OC data and financial indicators were linked into one sample using the registration codes. In order to observe the connection between the types of organizational culture and performance correlation analysis was conducted. In this study non-parametric Spearman rank correlation (ρ) was used to test the association between the types of OC and performance. The bigger the absolute value of ρ, the stronger the correlation. (Cohen *et al.* 2007) Ratner (2013) brings out that in case the absolute value of correlation coefficient stays between 0,3-0,7 it is a medium correlation, and in case of strong correlation, it stays between 0,7-1,0.

The connections between OC and performance based on theory and empirical findings are discussed in next chapter.

Findings

Factor analysis revealed that three types of OC were formed: Human Relations-Open System type, Rational Goal type and Internal Processes type. Final results of CFA are given in Table 3. Items with low factor loadings (under 0,5), where dropped during the purification process, because these items did not represent the types of OC well enough.

Table 3. Results of the CFA including the loadings of factors

Content of factors (All items measured with ten-point scales)	Factor loadings	Squared loadings
Open System-Human Relations type, 7 items: AVE=0.640, ρ=0.924		
7. Our organisation values highly people who are creative and offer fresh ideas	0.958	0.918
10. The members of our organisation are proud of belonging to this organization	0.932	0.869
12. The greatest asset of our organisation comprises its dedicated members	0.741	0.549
14. The management of our organisation positively reacts to initiatives proposed by the members	0.674	0.454
26. The management of our organisation has trustworthy relations with the members	0.826	0.682
27. Our organization is like one big family	0.822	0.676
28. People at our organisation gladly discuss personal things	0.578	0.334
Internal Processes type, 3 items: AVE=0.500, ρ=0.749		
32. Our organisation has many written rules	0.765	0.585
45. The management of our organisation is very demanding of the members	0.702	0.493
49. In our organization a strict reporting system is implemented	0.650	0.423
Rational Goal type, 3 items: AVE=0.505, ρ=0.754		
46. Goal of our organization is to gain as large a market share as possible	0.713	0.508
50. Our organization always tries to outpace the competitors	0.723	0.523
51. Results are of primary importance to the management of our organization	0.695	0.483
Fit indexes: χ^2=214.25, d.f.=43, p< 0.05, χ^2/d.f.=4.98, TLI=0.966, CFI=0.981, RMSEA=0.046		

Notes: the numbers in front of each statement indicates Organizational Values Questionnaire statement based on Reino (2009), original version of the questionnaire is in Estonian and approximate translation of items are presented in table
Source: author`s calculation using program STATA

CFA showed that the estimated model is good model evaluated by fit indexes (Hooper *et al.* 2008). It included Chi-square/degrees of freedom (χ^2/d.f.), which were equal to 4.98. This is an acceptable value of the quotient because the value was smaller than 5. Comparative fit index (CFI) was bigger than 0.95 and root-mean-square error of approximation (RMSEA) was smaller than 0.06. Controlling the validity indicators like the Average Variance Extracted (AVE>0.5), confirmed that the variables measure the respective latent constructs and all the latent variables are able to explain over 50% of the variance in the observed variables (Farrell, Rudd 2009). Testing the reliability indicator (ρ) results showed that the observed items in each latent factor are interrelated

to each other (ρ>0.6) (Hensley 1999). Discriminant validity showed that the connection between factors' themselves is lower than the correlation between factors and their own indicators. In this case values of AVE were bigger than squares of factors' correlations (0.640>0.107; 0.500>0.075; 0.505>0.289).

Compared to previous studies (see Reino 2009, Reino, Vadi 2012) the results are different. In previous studies the factor analyses divided items into four-factors and this kind of structure was described by 19 items. In current paper three-factor solution with 13 items gave the best result. Saame *et al.* (2011) also reached to the three-factor solution when investigating the OC patterns in hospital. Based on Estonian organizations it can be explained by that the flexibility influences the organizational dimensions more than external/internal focus.

The types of OC are linked, but connections differ in strength (Reino 2009). In Table 4 the correlations between different types of organizational culture are presented.

Table 4. Correlation between the types of organizational culture

Organizational culture type	Human Relations-Open System type	Internal Process type	Rational Goal type
Human Relations-Open System type	1.000		
Internal Process type	0.275*	1.000	
Rational Goal type	0.327*	0.538*	1.000

Notes: *correlations are significant at 0.05
Source: author`s calculations using program STATA

Statistically significant (p<0.05) positive correlations exist between all the types. Correlations between different types are not very strong and values are in the range of 0.275-0.538. Characterizing the relations that appeared in Table 4, Rational Goal type and Internal Process have a common value instability. Compared to the Rational Goal type and Human Relations-Open System type, Rational Goal type is more externally focused and stable, but Human Relation-Open System type is more flexible. Correlation was stronger between Rational Goal type and Internal Process type (0.538). This indicates that these types are connected to each other, which means that for example in order to get better performance organizations in Estonia need to follow rules and apply stronger structure. Weakest correlation was found between Human Relation-Open System type and Internal Processes type (0.275).

There are some empirical studies where have also discovered a significant and weak correlation between Internal Processes type and Rational Goal type when investigating the OC patterns (see for example Kalliath *et al.* 1999; Reino 2009), but Cameron, Quinn (1999) found that analyzing the business organizations Internal Processes type and Rational Goal type they had a negative correlation. But Reino (2009) found that statistically significant and positive correlation existed between all types. In current study conducted analysis also demonstrated that there were no negative correlations, which shows that these types are mutually complementary. In can also be pointed out that the correlation was high between same sector types (for example Rational Goal type had stronger correlation with Internal Processes type).

To investigate the relationships between the types of OC and performance, correlation analysis was used. Financial indicators were measured 1-3 years before, the same year and 1-3 years after the OC was measured (see Table 5, 6) – in total, seven time periods for financial indicators were used. But there were a lot of missing values in financial indicators. For example there were three organizations, where the measurement of the financial indicators was possible only one year after the OC were measured because of the fact that the latest data is from 2014. Also there were missing values due to deregistration of organizations or unavailable data. The number of organizations that were used in each performance indicators calculations are presented in Table 5 and Table 6 and also the correlations between the three types of OC and performance in different time periods.

Table 5 shows the correlations between the types of OC and performance indicators measured 1-, 2- and 3- years before the OC. As seen in Table 5 there was significant and strong correlation between Human Relations-Open System type and sales in all three years. The strongest correlation with this type and sales was when performance was measured one year before the OC, when the correlation was (0.846). Strong correlation was also between the same variables when performance was measured two years (0.727) and three years (0.703) before the OC. Human Relations-Open System type had a medium correlation with labour cost measured one (0.683) and two (0.786) years before the OC. Organizational performance that was measured one year before the OC had a medium correlation with ROA (0.575). All significant correlations with this

type and performance were positive. Based on that Hypothesis 1 and Hypothesis 2 were confirmed.

Bringing out the links with other types, it can be said that Internal Processes type was negatively correlated with ROA and ROI lagged three years, which confirm the Hypothesis 4. Rational Goal type had no significant correlation with the organizational performance in different time periods measured before the OC. These results show that Hypothesis H_3 is rejected.

Table 5. Correlations between the types of organizational culture and financial indicators measured before the organizational culture

Financial indicators measured 3 year before OC	Rational Goal type	Internal Processes type	Human Relations-Open System type
Log (sales per employee) (N=13)	0.231	-0.132	**0.703*****
Log (gross profit per employee) (N=11)	0.464	0.100	0.446
Log (labour costs per employee) (N=8)	0.476	0.095	0.286
ROA (N=16)	-0.035	**-0.574****	0.094
ROE (N=16)	0.308	0.084	0.420
ROI (N=16)	0.127	**-0.477***	0.277
Financial indicators measured 2 years before OC			
Log (sales per employee) (N=12)	-0.028	-0.161	**0.727*****
Log (gross profit per employee) (N=11)	0.327	0.164	0.382
Log (labour costs per employee) (N=8)	-0.095	-0.310	**0.786****
ROA (N=16)	0.032	**-0.479***	0.074
ROE (N=16)	0.308	0.084	0.420
ROI (N=16)	0.115	**-0.447***	0.174
Financial indicators measured 1 years before OC			
Log (sales per employee) (N=12)	0.056	-0.406	**0.846*****
Log (gross profit per employee) (N=9)	-0.183	0.100	0.333
Log (labour costs per employee) (N=9)	-0.167	-0.150	**0.683****
ROA (N=16)	-0.097	-0.288	0.135
ROE (N=16)	0.373	-0.031	**0.575****
ROI (N=16)	0.059	-0.247	0.274

Notes: correlations are * - significant at 10 per cent level, ** - significant at 5 per cent level, ***- significant at 1 per cent level, N- number of organizations, significant correlations are marked in boldface
Source: compiled by author using program STATA

These results show that Human Relations-Open System type had significant links with sales, labour costs and ROA and the correlations were significant when measured in different time period. Links with this type became stronger the closer it came to the OC measuring temporally. Internal Processes type and performance show significant negative correlations and got weaker as the passage of time. These correlation results support the research`s hypothesis H_5.

Table 6 presents the correlation analysis results where the links between the OC and performance measured at the same year and 1-, 2- and 3- years after the OC were measured.

Table 6 shows that significant the correlations were all positive which means that if one of the indicators increases then the other will change in the same direction. There was significantly strong correlation between Human Relations-Open System type and sales (0.782) measured the same year as the OC. Comparing the same time period with this type it was also positively correlated with ROE (0.560). That means Hypotheses 1, 2 were confirmed.

There was a significantly strong correlation with Internal Processes type and ROA (0.826), ROI (0.825) measured three years after the OC. It can be noted that the correlation among these variables became stronger. The measurements also showed significant correlations between the same variables measured after two years the OC were measured. These findings support the hypothesis 5. In comparison with other types Internal Processes type correlated with gross profit (0.667) measured the same year as OC. The results in Table 6 showed that Internal Processes type correlated with the performance positively, leading to partly support hypothesis H_4.

There were also links between Rational Goal type and performance. Rational Goal type was positively correlated with sales measured three years after OC (0.552). Strongest correlation was between performance and Rational Goal type with ROA (0.759), ROI (0.750) measured two years after the OC. Correlations became stronger the later they were measured compared to the OC. Based on this study goal-oriented organizations and organizations with strict rules are related positively with the organizational performance. For example Rational Goal type was correlated with ROA (0.759) and ROI (0.750) two years after the OC were measured. Based on that Hypotheses 3, 5 were approved.

Table 6. Correlations between the types of organizational culture and financial indicators measured the same year and after the organizational culture

Financial indicators measured same year as the OC	Rational Goal type	Internal Processes type	Human Relations-Open System type
Log (sales per employee) (N=10)	0.455	-0.236	**0.782*****
Log (gross profit per employee) (N=9)	-0.050	0.017	0.083
Log (labour costs per employee) (N=8)	-0.024	0.071	0.619
ROA (N=17)	-0.027	0.123	0.057
ROE (N=17)	0.376	0.009	**0.560****
ROI (N=17)	0.116	0.150	0.241
Financial indicators measured 1 year after the OC			
Log (sales per employee) (N=8)	0.095	-0.238	0.286
Log (gross profit per employee) (N=8)	-0.167	**0.667***	0.000
Log (labour costs per employee) (N=6)	0.371	-0.200	0.029
ROA (N=15)	0.086	0.329	0.271
ROE (N=15)	0.186	0.124	0.062
ROI (N=15)	0.086	0.329	0.271
Financial indicators measured 2 years after the OC			
Log (sales per employee) (N=10)	-0.236	-0.394	0.236
Log (gross profit per employee) (N=8)	0.536	0.071	0.214
Log (labour costs per employee) (N=8)	0.107	-0.214	0.429
ROA (N=14)	**0.759*****	**0.645****	0.198
ROE (N=14)	-0.047	0.094	-0.047
ROI (N=14)	**0.750*****	**0.574****	0.238
Financial indicators measured 3 years after the OC			
Log (sales per employee) (N=10)	**0.552***	0.249	**0.624***
Log (gross profit per employee) (N=7)	0.429	0.036	0.464
Log (labour costs per employee) (N=7)	0.393	0.321	0.000
ROA (N=12)	0.364	**0.826*****	0.378
ROE (N=12)	-0.253	0.086	0.005
ROI (N=12)	0.364	**0.825*****	0.378

Notes: correlations are * - significant at 10 per cent level, ** - significant at 5 per cent level, ***- significant at 1 per cent level, N- number of organizations, significant correlations are marked in boldface
Source: compiled by author using program STATA

Based on Estonian context it can be said that the Internal Processes type was the type that most correlated with the organizational performance. Estonian organizations are more oriented towards to stability, which means that organizations believe in formalization and bureaucracy and that organizational flexibility can be achieved by following formal rules and regulations. Values such as flexibility, adaptability, external orientation, capacity to change, uniqueness and flexibility are related with organizational performance. These results reveal that the types of OC have a positive impact on organizational performance. As time goes by organizations become more attention to rules and results-orientation in the OC. It can be interpreted that in

Estonian society organizations believe that competitiveness requires internal integration, formalization and rules.

Discussion and conclusion

To analyzing the linkage between OC and organizational performance, three types of OC were used: Human Relations-Open System type, Rational Goal type and Internal Processes type. Organizational performance was measured by six different financial indicators: gross profit per employee, labour costs per employee, sales per employee, return on equity (ROE), return on assets (ROA) and return on investment (ROI).

CFA revealed that Human Relations-Open System type formed one factor and their common value was flexibility. The findings differs from the original approach (see for example Reino 2009) but is in line with Saame *et al.* (2011). Based on Estonian organizations it can be said that the internal orientation is more important than external orientation, because correlation analysis results showed stronger correlations between performance and Internal Processes type than any other type. In this study a wider time horizon was used to give the opportunity for deeper analysis investigating the connections between the types and performance. Correlation analysis results revealed that the types of OC were linked with performance in different time periods. Three of five hypotheses were supported in current study, which indicates that most of organizational culture types correlated with performance (see Table 7). Hypotheses H_1, H_2, H_5 were supported and hypothesis H_3 and H_4 were partly supported.

Table 7. The connection with the types of organizational culture and performance based on Estonian organizations

Hypotheses	Results
Hypothesis 1: Human Relations type correlates positively with the organizational performance	**Supported:** this type correlated positively with performance measured before and after the OC were measured
Hypothesis 2: Open System type correlates positively with the organizational performance.	**Supported:** this type correlated positively with performance measured before and after the OC were measured
Hypothesis 3: Rational Goal type correlates positively with the organizational performance	**Partly supported**, because Rational Goal type did not correlated with performance measured before the OC but there were significant correlations with this type measured after the OC was measured
Hypothesis 4: Internal Processes type correlates negatively with the organizational performance.	**Partly supported,** because Internal Processes type correlated negatively with performance measured before the OC and correlation was positive measured after the OC was measured
Hypothesis 5: The types of organizational culture correlated with organizational performance measured performance in different time periods	**Supported:** connections existed measured in different time period

Source: compiled by the author

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Longer time period results revealed that Internal Processes type correlated with performance negatively when performance was measured two and three years before the OC was measured. But this type had the strongest positive connection with performance measured two and three years after the OC was measured. It is interesting, when measuring the links between the Internal Processes type and performance before the OC was measured, the correlation was negative, but correlations were positive when there was used financial indicators from the later periods. Internal Processes type was also positively correlated with sales per employee, ROA, ROE and ROI and the links between OC and performance strengthened over time. Correlations between the Internal Processes type and ROA, ROI were strongest measured three years after the OC. Rational Goal type did not correlated with performance measured before the OC.

Human Relations-Open System type links with performance were all positive in different time period, but Internal Processes type which had negative correlation with performance measured before the OC and Rational Goal type, which did not correlate with performance measured one, two and three years before the OC. Compared to the earlier studies Yilmaz, Ergun (2008) and Yesil, Kaya (2013) found that there were no significant correlations between sales growth, ROA and OC indicators (see Table 8). In this study correlation with Rational Goal type and performance was significant after the OC were measured. Hartnell *et al.* (2011) also found that market type correlated strongly with profit and growth.

Human Relations type and Open System type correlated positively with performance measured before and after the OC. In Spain, Naranjo-Valencia *et al.* (2016) also found that adhocracy culture had the strongest positive correlation with performance, but with market culture the link was negative and there were no significant correlation with the hierarchy. In Table 8 the summary of previous studies where correlation analysis and CVF were used for investigating the links between the organizational culture and performance, is presented.

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Table 8. Correlations analysis results between the OC and performance based on previous studies

Authors	The types of organizational culture			
	Open System type	Internal Processes type	Rational Goal type	Human Relations type
Hartnell *et al.* (2011)	+	+	+	+
Jacobs *et al.* (2013)	+	+	+	+
Yesil, Kaya (2013)	NS	NS	NS	NS
Valmohammadi, Roshanzamir (2015)	+	+	+	+
Naranjo-Valencia *et al.* (2016)	+	NS	-	+

Notes: CVF was used in the studies; "+ " indicates the connection is positive, "- " indicates the connection is negative, NS indicates that the connection was analyzed, but is not significant
Source: compiled by the author

In different countries the results vary, for example Spain, Naranjo-Valencia *et al. (*2016) found that control orientations and flexibility versus stability was more important than external orientation versus internal orientation. That means that supporting the innovation and also structure is more important than focusing on competition. In different countries types correlated differently with performance over different time periods. This may be due to the fact that organizations operate in different sectors and environment shapes different patterns of OC. Applied to Estonian context Naranjo-Valencia *et al.* (2016) research results have some similarity, flexibility is something that companies must improve in order to improve their performance to get better performance. Also the access to data varies from country to country, which sets limits on researches.

Current study demonstrated that Estonian organizations believe in formalizations and rules. Based on Estonian cultural context, it has been said that the most suitable organizational culture describing Estonian organizations would be the well-oiled machine (Vadi, Meri 2005). These kind of organizations can be described as bureaucractic, following strict rules and solving problems according to the regulations

and based on the current study analysis results, that kind of organizational cultre type was connected with performance.

The discussion also covered the period that included period of the economic crises of 2009-2011. Based on earlier research Reino *et al.* (2007) have pointed out that important changes in environment may fasten the culture transformation. According to that it can be said that economic crises could have changed the OC and it could have change on organization`s financial indicators. In current study these kind of changes have was not in focus.

Limitations and future studies

In this paper three different types of OC were examined based on confirmatory factor analysis, but in the future research when increasing the sample size the OC types loadings may change. One opportunity for further investigation would be used regression analyses to assess the linkages direction and strength. But when it comes to characterizing the whole sample there were many shortages in socio-demographic variables, like ethnicity and position. Carring out the comprehensive analysis between different groups will be even more complex in the future because almost 35% of the respondents had not marked no socio-demographic features in the entire sample. This is an important limitation for further studies, because since carrying out the research about OC needs active cooperation with the organizations observed, but many of them set different restrictions on the data that researchers need to have access to.

In the future the OC research in these organizations could be repeated and the results can be compared to previous findings. In addition, it would be possible to conduct interviews with participating organizations. This would provide opportunities for more comprehensive analysis when making conclusions.

ORGANISATSIOONIKULTUURI JA TULEMUSLIKKUSE VAHELISED SEOSED EESTI ÄRIORGANISATSIOONIDE NÄITEL

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Empiirilistest uurimustest saadud tulemused toovad esile organisatsioonikultuuri olulisuse, kinnitades, et organisatsioonikultuur on seotud organisatsiooni sooritusega. Organisatsioonikultuur mõjutab seda, kuidas inimesed pühenduvad oma tööle, mis omakorda mõjutab tööga rahulolu ja tööjõuvoolavust. On palju erinevaid aspekte, kuidas defineerida ja käsitleda organisatsioonikultuur ning ühtset käsitlust selle mõiste puhul polegi. Samas on erinevate autorid välja toodud, et jagatud väärtused organisatsioonis on võtmeelement. Sellest tulenevalt on töö autor välja toonud erinevaid organisatsioonikultuuri käsitlusi ning andnud ülevaate Cameron'i ja Quinn'i, Daft'i, Harrisoni, Jones'i ning Goffe tüploogiatest, mille abil on võimalik organisatsioonikultuuri hinnata. Organisatsioonikultuuri tuleb oskuslikult juhtida ning kujundada, kuna see on eriti oluline muutuvates majanduskeskkonna tingimustes. Uuritav teema on aktuaalne Eesti kontekstis, kuna pärast Euroopa Liiduga liitumist pidid paljud organisatsioonid leidma uue võimaluse, kuidas kasvavas konkurentsis püsima jääda. Ometi pole palju varasemaid uuringuid, kus organisatsioonikultuuri ja tulemuslikkuse vahelisi seoseid oleks Eesti ettevõtete põhjal uuritud.

Organisatsioonikultuuri ja tulemuslikkuse vahelisi seoseid Eestis on uurinud näiteks Vadi (2000), Reino (2009), Aidla (2009), Saame *et al.* (2011) ning tulemustest on selgunud, et organisatsioonikultuur annab organisatsioonidele konkurentsieelise. See tuleneb sellest, et organisatsioonikultuuri kujundamine võtab aega ning seda on seetõttu konkurentidel raske kopeerida (Yesil, Kaya 2013). Kuna muutused organisatsioonis võtavad aega, tuleks põhjalikumalt uurida organisatsioonikultuuri ja väliskeskkonna vahelisi mõjusid. Võrreldes varasemate uuringute tulemusi, siis tuli mitmest uuringust välja, et pikema aja perioodi kasutamine finantsnäitajate mõõtmisel annab parema võimaluse analüüsi kaasata väliskeskkonnast tingitud mõjusid. Ometi on varasemad uurijad läbiviinud uuringuid, kus on uuritud organisatsioonikultuuri ja tulemuslikkuse

vahelisi seoseid. Tulemused on vastuolulised ning edasiarenduste võimalusena on välja toodud pikema ajaperioodi kasutamine mõõtmaks finantsnäitajaid. Selles tulenevalt oligi töö essmärgiks uurida seoseid organisatsioonikultuuri tüüpide ja finantsnäitajate vahel vaadeldes finantsnäitajaid erinevatel ajaperioodidel. See on uudne lähenemine, kuna Eestis pole seoseid organisatsioonikultuuri tüüpide ja tulemuslikkuse vahel pole varasemalt pikema ajaperioodil analüüsitud. Lisaks olid uuringusse kaasatud kuus erinevat finantnäitajad (müügitulu töötaja kohta, tööjõukulu töötaja kohta, kasum töötaja kohta, ROE, ROA ja ROI), mis võimaldasid saada detailsema ülevaate seoste muutumisest ajas.

Organisatsioonikultuuri analüüsimiseks kasutati A. Reino poolt (2009) välja töötatud Organisatsiooni väärtuste küsimustikku (*Organizational Values Questionnaire*), mille algidee põhineb Konkureerivate Väärtuste Raamistikul. Selles käsitluses eristatakse kaht dimensiooni: stabiilsus/paindlikkus ja sissepoole suunatus/väljapoole suunatus. Iseloomustades neid kahte dimensiooni, siis sissepoole suunatus näitab keskendumist organisatsioonisisesele koostööle, ühtlusele, mis on vajalik eelkõige organisatsiooni säilimiseks. Väljapoole suunatus tähendab aga fokuseeritust konkurentsile ja kohandumist väliskeskkonnast tulenevatele muutustele. Teine dimensioon antud tüpoloogia puhul näitab paindlikkuse ja stabiilsuse mõõdet, kus üheltpoolt on organisatsioonidel olla vaja kohanemisvõimelised, innovatsiooni soodustavad ning indiviidide loovust väärtustavad, aga samas on välja toodud, et efektiivsust saab tagada struktuuri loomisega, milleks on vajalik kontrolli ja võimu rakendamine. (Cameron, Quinn 2006) Nimetatud põhidimensioonide abil saab välja tuua neli erinevat organisatsioonikultuuri tüüpi: Avatud süsteemi tüüp, Inimsuhete tüüp, Tulemustele suunatud ja Sisemiste protsesside tüüp. Antud tüpoloogia on leidnud laialdast kasutamist Eestis. Ligikaudu 50 erinevas organisatsioonis on uuritud selle küsimustiku abil organisatsioonikultuuri ja selle tulemusena moodustunud mahukas andmebaas erinevate ettevõtete organisatsioonikultuuri andmetest. Lisaks on nimetatud dimensioonid olulised Eesti kui siirdeühiskonna kontekstis, eelkõige paindlikkuse ja kohanemisvõimelisuse aspektist võetuna.

Analüüsiks kasutati organisatsioonikultuuri andmestikku, mis oli erinevate uurijate poolt kokku kogutud. Uuringus kasutatav valim koosnes 19 organisatsioonist ning

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vastajaid oli kokku 2254. Uuringud viidi läbi aastatel 2005-2016, kus vastajate arv aastate lõikes oli väga varieeruv. Iseloomustades valimit, siis see oli väga mitmekesine ning igast organisatsioonist olid esindatud erineva profiiliga inimesed. Finantsandmed olid võetud Eesti Äriregistrist, mis tuginesid majandusaasta aruannele hõlmates perioode 2002-2014.

Andmete analüüsimisel viidi läbi kaks erinevat etappi. Kõigepealt uuriti organisatsioonikultuuri mustreid ning seejärel organisatsioonikultuuri ja tulemuslikkuse vahelisi seoseid. Esmalt viidi läbi kinnitav faktoranalüüs, mille eesmärgiks oli A. Reino poolt välja töötatud organisatsioonikulutuuri tüüpide skaalade kinnitamine. Analüüsi käigus mudel nö „puhastati" ehk eemaldati mudelist väited, mis ei olnud piisavalt tugevalt erinevate organisatsioonikultuuri tüüpidega seotud. Faktoranalüüs andis 13-väitelise lahenduse, millega eristati kolme alamskaalat ehk kolme erinevat organisatsioonikultuuri tüüpi: Inimsuhete-Avatud süsteemi tüüp, Tulemustele suunatud tüüp ja Sisemiste protsesside tüüp. See tuleneb sellest, et antud juhul hinnati paidlikkust olulisemaks võrreles sissepoole/väljapoole suunatusega. Samas saab välja tuua, et see lahend tuli erinev võrreldes A. Reino 4-faktorilise lahendusega, aga sarnane Saame *et al.* (2011) tulemustega, kus hinnati seoseid organisatsioonikultuuri ja patsientide rahulolu vahel, iseloomustades organisatsioonikultuuri samuti 3-faktorilise lahendusega. Seejärel kontrolliti skaalade valiidsust, et igat organisatsioonikultuuri tüüpi iseloomustaksid tüüpi kirjeldavad väited. Skaalade puhul hinnati ühildumisvaliidsust, erinevusvaliidsust ja reliaablust. Lisaks hinnati mudeli headust erinevate kriteeriumite alusel. Mudeli hindamisel olid valiidsus ja reliaablus tagatud ning samuti vastas mudel headuse kriteeriumitele.

Järgmisena viidi läbi korrelatsioonanalüüs, mille käigus analüüsiti seoseid organisatsioonikultuuri ja finantsnäitajatega vahel mõõdetuna kolm, kaks ja üks aastat enne organisatsioonikultuuri mõõtmist, samal aastal ning üks, kaks ja kolm aastat pärast organisatsioonikultuuri mõõtmist. Kuna finantnäitajaid vaadeldi niivõrd pikal perioodil, siis esines palju puudulikke väärtusi majandusaasta aruannetes, lisaks olid mõned organisatsioonid lõpetanud oma tegevuse, mis ei võimaldanud kõiki ajaperioode analüüsis kasutada. Näiteks pärinesid viimased finantsandmed 2014. aastast, aga kõige hilisemad organisatsioonikultuuri olid 2016. aastast. See tähendas seda, et antud

organisatsiooni puhul ei olnud võimalik vaadelda seoseid organisatsioonikultuuri ja tulemuslikkuse vahel üks, kaks või kolm aastat pärast organisatsioonikultuuri mõõtmist, kuna puudusid vastavad finantsnäitajad.

Antud analüüsist tuli välja, et organisatsioonikultuur oli seotud tulemuslikkuse näitajatega. Analüüsides seosed organisatsioonikultuuri tüüpide ja finantsnäitajate vahel, kui finantsnäitajad oli mõõdetud enne organisatsioonikultuuri mõõtmist, tuli välja, kõik seosed ei olnud positiivsed. Kõige tugevamalt olid omavahel seotud Inimsuhete-Avatud süsteemi tüüp ja tulemuslikkuse näitajad, mõõdetuna pärast organisastioonikultuuri mõõtmist. Seos Inimsuhete-Avatud süsteemi tüübi ja finantsnäitajate vahel tugevnes, mida varem finantsnäitajad olid mõõdetud. Tuues välja seoseid teiste tüüpide ja tulemuslikkuse vahel, siis Sisesmiste protsesside tüüp korreleerus negatiivselt ROA ja ROI-ga organisatsioonikultuurile järgnevalt mõõdetud finantsnäitajatega. Tuues välja kolmanda organisatsioonikultuuri tüübi, siis statistilselt olulisi seoseid Tulemustele suunatud tüübi ja tulemuslikkuse vahel ei esinenud mõõtes finantnäitajaid enne organisatsioonikultuuri mõõtmist.

Kasutades finantsnäitajaid pärast organisatsioonikultuuri mõõtmist, olid seosed erinevad võrreldes varasemalt mõõdetud finantnäitajate ja organisatsioonikultuuri vaheliste seostega. Oluline on välja tuua, et kõik statistiliselt olulised korrelatsioonid olid positiivsed. Kõige tugevamalt olid seotud Sisemiste Protsesside tüüp ROA ja ROI-ga mõõdetuna kolm aastat pärast organisatsioonikultuuri mõõtmist. Tulemustele suunatud tüüp korreleerus samuti tugevalt ROA, ROI-ga, kui finantsnäitajad olid mõõdetud organisatsioonikultuurile järgnevatel perioodidel. Lisaks esines statistiliselt oluline korrelatsiooni sama organisatsioonikultuuri tüübi ja müüginäitaja vahel mõõdetuna kolm aastat pärast organisatsioonikultuuri mõõtmist. Inimsuhete-Avatud süsteemi tüüp korreleerus positiivselt müüginäitajate ja ROE-ga mõõdetuna samal aastal kui oli mõõdetud organisatsioonikultuuri.

Analüüsides seoseid organisatsioonikultuuri ja tulemuslikkuse vahel, saab öelda, et kõige tugevamad seosed esinesid kolm aasta pärast organisatsioonikultuuri mõõtmist. Mis näitab seda, pikemas perspektiivis on organisatsioonikultuur ja tulemuslikkuse näitajad omavahel seotud.

Uuringu edasiarengu võimalusena saab kindlasti välja tuua regressioonanalüüsi, kui suurendada valimisse kuuluvate ettevõtete arvu. Lisaks oleks võimalus viia läbi kordusuuring organisatsioonikultuuride hindamiseks, mis võimaldaks võrrelda saadud tulemusi varasemate tulemustega või leida ka uusi seoseid. Edasiuurimise võimalus oleks ka intervjuude läbiviimine, mis annaks võimaluse tulemuste veelgi põhjalikumaks analüüsiks.

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Appendix 1: The relationships between organizational culture and performance

Author(s)	Year	Samples (employees and companies numbers)	Performance measurement	Organizational culture (OC)	Statistical method, independent/dependent variable	Results (linkages between OC and performance)
Hartnell, Ou, Kinicki	2011	880 different respondents from different companies	Profit, market performance, growth, product and service quality, innovation, job satisfaction, commitment	Competing Values Framework	Factor analysis, correlation analysis, exploratory moderator analysis	Positive correlations between OC types and financial indicators, Clan culture were strongly correlated with product and service quality, the Market culture were strongly correlated with innovation and had the strongest positive relationship with performance
Saame, Reino, Vadi	2011	Tartu University hospital, 456 respondents	Patient satisfaction	Competing Values Framework	Factor analysis	High patient satisfaction was less oriented Rational Goal type values than clinics where patient satisfaction were low
Jacobs, Mannion, Davies, Harrison,Konteh, Walshe	2013	English hospitals, longitudinal research	Retained surplus, clinical negligence expenditure, waiting times, length of stay, other measures of efficiency, regional dummy variables	Competing Values Framework	Probit and multinomial logit models, dependent variables: performance indicators, independent variables: clan, adhocracy, market, hierarchy	Developmental and clan culture were associated with higher performance.
Yesil, Kaya	2013	Turkey 54 companies	ROA, sales growth	Competing Values Framework	Regression and correlation analysis, dependent variables: sales growth, ROA; independent variables: clan, adhocracy, market, hierarchy	No significant correlation between the variables and significant effect on sales growth and ROA
Valmohammadi, Roshanzamir	2015	47 Tehran's pharmaceutical companies, 235 respondents	Product and process outcomes, customer-focused outcomes, workforce-focused outcomes, leadership and governance outcomes, and financial and market outcomes, subjective measures	Competing Values Framework	Factor analysis, structural equation modelling	OC is positively associated with performance
Naranjo-Valencia, Jiménez-Jiménez, Sanz-Valle	2015	1600 Spanish companies from different industries, 446 respondents	Respondents evaluated the firm's performance over the past 3 years, subjective measures	Competing Values Framework	Regression and correlation analysis, dependent variables: performance, independent variables: clan, adhocracy, market, hierarchy	Adhocracy culture, clan culture have a positive effect on performance and the hierarchy culture and market culture has a negative effect on performance

Author	Year	Sample	Performance indicators	OC dimensions	Methods	Results
Yilmaz, Ergun	2008	134 Turkey`s firms, 1176 respondents	Sales growth, market share growth, ROA	Involvement, consistency, adaptability, mission	Correlation analysis, regression analysis	All organizational indicators were positively correlated with performance indicators
Zehir, Ertosunb, Zehirc, Müceldilid	2011	Manufacturing and service sector companies in Turkey, 259 respondents	Defect level of products/services, customer satisfaction level, sales, market share, customer complaint, new product/service supply, entering in the market, market reaction new products	OC: competitive, (innovative is a sub-dimension), bureaucratic and community	Factor analysis, correlation and regression analysis, dependent variables: performance indicators; independent variables: OC indicators	Bureaucratic culture indicates slightly lower relation with performance, community culture had significant relationship with firm performance as well as other culture types, Competitive, bureaucratic, community are directly related to performance. Externally oriented OC were positively linked with performance.
Cheung, Wong, Lam	2012	Hong Kong`s constructions companies, 109 respondents	Key Performance Indicator (KPI): profitability, productivity, return on capital employed, return on value added, interest cover, return on investment, ratio of value added, repeat business, outstanding money and time	Eight cultural dimensions: goal clarity, coordination and integration, conflict resolution, employee participation, innovation orientation, performance emphasis, reward and team orientation	Structural equation modelling	The effect of OC on performance is positive and significant. Innovation organizations have proved higher performance.
Chatman, Caldwell, O`Reilly, Doerr	2014	56 USA and 44 Ireland high-technology firms, over 2500 respondents	Net income, revenue, and operating cash flow	Adaptability, integrity, collaborative, results oriented, customer oriented, and detail oriented	Factor analysis, regression analysis, dependent variables: financial performance indicators, independent variables: culture consensus, adaptability intensity	Culture was positively related to financial performance when adaptability intensity was high, but negatively related to performance when adaptability intensity was low. OC indicators were related to the future financial performance.
Hoffman, Cao, Schniederjans	2014	172 respondents in USA and 261 respondents in China	Budget requirements, projects met expectations, team members satisfaction, benefits of projects, sales growth, market share, competitive position	Dimensions of institutional collectivism, results, positive work environment, leadership tolerance, regulatory and competitive pressure, results orientation, overall project performance	Regression analysis, dependent variables: financial performance indicators, independent variables: OC indicators	OC have positive relationship with performance, cultural factors like collectivism, tolerance for risk, positive work environment, results orientated and IT performance were positively related. Organizations with cultures that were more results oriented had higher performance.

Source: compiled by the author

Appendix 2: Descriptive information about the business organization

Organization	Employees number	Organization size	Year of foundation/ deregistration	Sector	Year of the survey	Number of respondents
Organization 1	227	medium	1996	service	2005	148
Organization 2	201	medium	deregistration in 2012	service	2005	63
Organization 3	92	medium	1996	service	2005	61
Organization 4	1	micro	1997	service	2005	101
Organization 5	4	micro	1995	production	2006	30
Organization 6	97	medium	1996	service	2006	66
Organization 7	45	small	deregistration in 2009	production	2006	24
Organization 8	143	medium	1997	service	2006	94
Organization 9	280	large	1997	service	2007	161
Organization 10	70	medium	deregistration in 2010	production	2008	48
Organization 11	325	large	1997	production	2007	163
Organization 12	3180	large	1997	service	2008	208
Organization 13	34	small	2007	production	2009	18
Organization 14	431	large	1996	production	2010	297
Organization 15	690	large	1996	production	2010	196
Organization 16	80	medium	1996	production	2013	52
Organization 17	170	medium	2001	service	2013	24
Organization 18	1062	large	1999	service	2013	120
Organization 19	517	large	1997	service	2016	380

Notes: Organization sizes: micro (1-9 employees), small (10-49 employees), medium (50-249 employees), large (over 250 employees)
Source: compiled by the author

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